

U.S. SERIAL NO: 08/126,505
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AMENDMENT

D
complement regulating protein analogs wherein the short consensus repeats are rearranged, and complement regulating protein analogs consisting of as few as three short consensus repeats, wherein the protein analog binds C3b, C4b or C3b and C4b.
concl.

Please cancel claim 2.

2. (amended) The analog of claim [2] 1 wherein the protein is complement receptor one.

D²
3. (amended) The analog of claim [2] 1 wherein the protein is decay accelerating factor.

4. (amended) The analog of claim [2] 1 wherein the protein is factor H.

8. (three times amended) [The] An analog of [claim 2] a protein regulating complement activation having short consensus repeats of amino acid sequence selected from the group consisting of complement receptor 1, complement receptor 2, decay accelerating factor, membrane cofactor protein, C4 binding protein, and factor H, and those complement regulating proteins wherein the carboxy terminus is removed to allow the protein to be secreted, wherein the protein contains a change within a short consensus repeat that corresponds with a change to complement receptor one as shown in Sequence ID No. 13 selected from the group consisting of:
D³
2/2 6/2

CR1-4 with its first 122 amino acids (SCR1-2) (Sequence ID Nos 1 and 3) replaced with CR1 amino acids 497-618 (SCR 8-9)

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(Sequence ID Nos. 2 and 4) and CR1-4(8,9) with deletion of 194-253; and substitution of amino acids 271-543 with: T-R-T-T-F-H-L-G-R-K-C-S-T-A-V-S-P-A-T-T-S-E-G-L-R-L-C-A-A-H-P-R-E-T-G-A-L-Q-P-P-H-V-K (Sequence ID No. 11), or structurally similar amino acids.

9. (four times amended) [The] An analog of [claim 2] a protein regulating complement activation having short consensus repeats of amino acid sequence selected from the group consisting of complement receptor 1, complement receptor 2, decay accelerating factor, membrane cofactor protein, C4 binding protein, and factor H, and those complement regulating proteins wherein the carboxy terminus is removed to allow the protein to be secreted, wherein the protein contains a change within a short consensus repeat that corresponds with a change to complement receptor one as shown in Sequence ID No. 13 selected from the group consisting of:

13
cont.

79: D (amino acid 19 of Sequence ID No. 4); 37,79: Y,D (amino acid 37 of Sequence ID No. 2 and amino acid 19 of Sequence ID No. 4); 92: T (amino acid 32 of Sequence ID No. 4); 109-112: N-A-A-H (amino acids 49-52 of Sequence ID No. 4); 109-112, 114-117, 121: N-A-A-H, S-T-K-P...Q (amino acids 49-52, 54-57, 61 of Sequence ID No. 4); 114-117, 121: S-T-K-P...Q; (amino acids 54-61 of Sequence ID No. 4) 116: K (amino acid 56 of Sequence ID No. 4); 116,117: K-P (amino acids 56-57 of Sequence ID No. 4); 92-94: K...Y (amino

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acids 32-34 of Sequence ID NO. 3); 99,103,106: S...T...I (amino acids 39, 43 and 46 of Sequence ID No. 3); 109-112: D-T-V-I (amino acids 49-52 of Sequence ID No. 3); 110: T (amino acid 50 of Sequence ID No. 3); 111: V (amino acid 51 of Sequence ID No. 3); 112: I (amino acid 52 of Sequence ID No. 3); [114: D (amino acid 54 of Sequence ID No. 3); 115: N (amino acid 55 of Sequence ID No. 3); 121: D (amino acid 61 of Sequence ID No. 3); 117: T (amino acid 57 of Sequence ID No. 3);] 1,3: Q...N (amino acids 1, 3 of Sequence ID No. 1); 6-9: ~~S-W-L-P~~ (amino acids 6-9 of Sequence ID No. 1); 12-16, 18-21: K-L-K-T-Q...N-A-S-D (amino acids 12-21 of Sequence ID No. 2); 27,29: S...K (amino acids 27,29 of Sequence ID No. 2); 37: S (amino acid 37 of Sequence ID No. 1); 44, 47, 49: I...K...S (amino acids 44, 47, 49 of Sequence ID No. 1); 52-54, 57, 59: T-G-A...R...R (amino acids 52-54, 57, 59 of Sequence ID No. 1); 78-79, 82: K-G...F (amino acids 18-19, 22 of Sequence ID No. 3); 85, 87: Q...K (amino acids 25, 27 of Sequence ID No. 3); 12-16, 18-21: R-P-T-N-L...D-E-F-E (amino acids 12-21 of Sequence ID No. 1); 27,29: Y...N (amino acids 27, 29 of Sequence ID No. 1); 35, 64-65, 94: G...R-N...Y (amino acid 35 of Sequence ID No. 1, amino acids 4-5, 34 of Sequence ID No. 3), substitutions with structurally similar amino acids, and combinations thereof.

10. (three times amended) [The] An analog of [claim 2 wherein the complement regulatory protein is] decay accelerating

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factor wherein one or more substitutions are introduced into the region of the protein corresponding to decay accelerating factor short consensus repeats SCRs 2-3 as shown in Sequence ID No. 17 selected from the group consisting of 180-187: S-T-K-P-P-I-C-Q (amino acids 54-61 of Sequence ID No. 4); 175-178: N-A-A-H (amino acids 49-52 of Sequence ID No. 4); 175-187: S-T-K-P-P-I-C-Q-N-A-A-H (Sequence ID No. 9); 130: R (amino acid 4 of Sequence ID No. 3); 145: D (amino acid 19 of Sequence ID No. 4); 77-84: K-L-K-T-Q-T-N-A-S-D (amino acids 12-21 of Sequence ID No. 2); 90-92: S-L-K (amino acids 27-29 of Sequence ID No. 2), substitutions with structurally similar amino acids, and combinations thereof.

DJ
DJ
13. (amended) The analog of claim 1 wherein the protein has C3b cofactor activity, C4b cofactor activity and decay accelerating activity.

DJ
Please cancel claim 17.

DJ
DJ
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23. (three times amended) [The] A method [of claim 17] for making a protein regulating complement activation having short consensus repeats of amino acid sequence selected from the group consisting of complement receptor 1, complement receptor 2, decay accelerating factor, membrane cofactor protein, C4 binding protein, and factor H, and those complement regulating proteins wherein the carboxy terminus is removed to allow the protein to be secreted, wherein the protein analog [contains a change] is changed within a short consensus repeat [that corresponds with]

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to correspond to a change to complement receptor one as shown in Sequence ID No. 13 selected from the group consisting of:

CR1-4 with its first 122 amino acids (SCR1-2) (Sequence ID Nos. 1 and 3) replaced with CR1 amino acids 497-618 (SCR 8-9) (Sequence ID Nos. 2 and 4) and CR1-4(8,9) with deletion of 194-253; substitution of amino acids 271-543 with: T-R-T-T-F-H-L-G-R-K-C-S-T-A-V-S-P-A-T-T-S-E-G-L-R-L-C-A-A-H-P-R-E-T-G-A-L-Q-P-P-H-V-K (Sequence ID No. 11), or structurally similar amino acids.

24. (three times amended) [The] A method [of claim 17] for making a protein regulating complement activation having short consensus repeats of amino acid sequence selected from the group consisting of complement receptor 1, complement receptor 2, decay accelerating factor, membrane cofactor protein, C4 binding protein, and factor H, and those complement regulating proteins wherein the carboxy terminus is removed to allow the protein to be secreted, wherein the protein analog [contains a change] is changed within a short consensus repeat [that corresponds with] to correspond to a change to complement receptor one as shown in Sequence ID No. 13 selected from the group consisting of:

79: D (amino acid 19 of Sequence ID No. 4); 37,79: Y,D (amino acid 37 of Sequence ID No. 2 and amino acid 19 of Sequence ID No. 4); 92: T (amino acid 32 of Sequence ID No. 4); 109-112: N-A-A-H (amino acids 49-52 of Sequence ID No. 4); 109-112, 114-117, 121: N-A-A-H, S-T-K-P...Q (amino acids 49-52, 54-57, 61 of Sequence ID

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No. 4); 114-117, 121: S-T-K-P...Q; (amino acids 54-61 of Sequence ID No. 4) 116: K (amino acid 56 of Sequence ID No. 4); 116,117: K-P (amino acids 56-57 of Sequence ID No. 4); 92-94: K...Y (amino acids 32-34 of Sequence ID NO. 3); 99,103,106: S...T...I (amino acids 39, 43 and 46 of Sequence ID No. 3); 109-112: D-T-V-I (amino acids 49-52 of Sequence ID No. 3); 110: T (amino acid 50 of Sequence ID No. 3); 111: V (amino acid 51 of Sequence ID No. 3); 112: I (amino acid 52 of Sequence ID No. 3); [114: D (amino acid 54 of Sequence ID No. 3); 115: N (amino acid 55 of Sequence ID No. 3); 121: D (amino acid 61 of Sequence ID No. 3); 117: T (amino acid 57 of Sequence ID No. 3);] 1,3: Q...N (amino acids 1, 3 of Sequence ID No. 1); 6-9: E-W-L-P (amino acids 6-9 of Sequence ID No. 1); 12-16, 18-21: K-L-K-T-Q...N-A-S-D (amino acids 12-21 of Sequence ID No. 2); 27,29: S...K (amino acids 27,29 of Sequence ID No. 2); 37: S (amino acid 37 of Sequence ID No. 1); 44, 47, 49: I...K...S (amino acids 44, 47, 49 of Sequence ID No. 1); 52-54, 57, 59: T-G-A...R...R (amino acids 52-54, 57, 59 of Sequence ID No. 1); 78-79, 82: K-G...F (amino acids 18-19, 22 of Sequence ID No. 3); 85, 87: Q...K (amino acids 25, 27 of Sequence ID No. 3); 12-16, 18-21: R-P-T-N-L...D-E-F-E (amino acids 12-21 of Sequence ID No. 1); 27,29: Y...N (amino acids 27, 29 of Sequence ID No. 1); 35, 64-65, 94: G...R-N...Y (amino acid 35 of Sequence ID No. 1, amino acids 4-5, 34 of Sequence ID No.

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3), substitutions with structurally similar amino acids, and
combinations thereof.

DP
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Concl.

25. (three times amended) [The] A method [of claim 17
wherein the complement regulatory protein is] for making an
analog of decay accelerating factor wherein one or more
substitutions are introduced into the region of the protein
corresponding to decay accelerating factor short consensus
repeats SCRs 2-3 as shown in Sequence ID No. 17 selected from the
group consisting of

180-187: S-T-K-P-P-I-C-Q (amino acids 54-61 of Sequence ID No.
4); 175-178: N-A-A-H (amino acids 49-52 of Sequence ID No. 4);
175-187: S-T-K-P-P-I-C-Q-N-A-A-H (Sequence ID No. 9); 130: R
(amino acid 4 of Sequence ID No. 3); 145: D (amino acid 19 of
Sequence ID No. 4); 77-84: K-L-K-T-Q-T-N-A-S-D (amino acids 12-21
of Sequence ID No. 2); 90-92: S-L-K (amino acids 27-29 of
Sequence ID No. 2), substitutions with structurally similar amino
acids, and combinations thereof.

Remarks

The amended claims reflect the amendments mailed
February 101, 994, to insert references to the sequence listing.
These were inadvertently omitted from the claims as listed in the
last amendment.